

REMARKS

In the non-final Office Action dated September 11, 2006, the Examiner withdrew the double patenting rejection. In the outstanding Office Action, claims 1-16 were rejected under 35 U.S.C. § 112, 1st ¶, as being non-enabling. Claims 1-16 were also rejected under § 112, 2nd ¶, as indefinite.

This response is being submitted with a Supplemental Information Disclosure Statement. In the last Office Action, the Examiner noted that the related cases in the prior IDS were not appropriate for an IDS because the application serial numbers would not be printed on the issued patent. In the attached IDS, the relevant applications have been re-cited. One of these applications has already published, and copies of the remaining pending unpublished applications have been submitted in compliance with 37 C.F.R. § 1.98(a)(2)(iii) and 1.98(b)(3). Accordingly, the attached IDS is believed to be in full compliance with the provisions of Rules 1.97 and 1.98. It is respectfully requested that the Examiner consider the cited applications.

In this submission, claims 1, 14 and 15 have been amended for formalities, and to more particularly define the claimed invention. New claims 17-21 have been added. No new matter has been added by amendment. Support for the amendments to claims 1, 14, and 15, and new claims 18 and 19, are found in the application as originally filed at page 4, line 22 through page 5, line 2, and page 4, lines 16-17. New claim 17 is supported by original claim 1 and examples 1-6. Claims 20 and 21 are supported in the application page 5, lines 12-16. For the reasons stated herein and in the attached *Declaration of Steven P. Pauls, Sr.*, the enablement and definiteness rejections of record are untenable in view of the amendments, and should be withdrawn.

The present invention relates to fibrous webs which include an emulsion binder having an emulsion polymer with salt-sensitive properties. Specifically, the polymer disperses in water, yet remains non-dispersible in salty solutions, *e.g.*, 0.5 wt. percent or more salt. The present invention is useful to produce articles which maintain strength in the presence of a salt-

containing substance, yet disperse in a wastewater stream when flushed down a toilet. This is advantageous because it prevents clogging of sewage systems which can be caused by disposable items.

Amended claims 1, 14, and 15 recite that the salt-sensitive emulsion resin includes specific types of hydrophilic monomers and non-hydrophilic monomers. Claim 1, representative of the claimed subject matter, is reproduced below for reference:

Amended claim 1. A non-woven material comprising:

- a) a web of fibers; and
- b) an emulsion binder comprising a colloid-stabilized, tap water-dispersible polymer, wherein said colloid-stabilized, tap water-dispersible polymer is non-dispersible in aqueous solutions containing 0.5 weight percent or more of an inorganic salt, and wherein said colloid-stabilized, tap water-dispersible polymer comprises from 1 to 100 percent by weight of a hydrophilic monomer selected from the group consisting of acidic monomers containing a carboxylic acid moieties, a dicarboxylic acid moiety, a sulfonic acid moiety, or combinations thereof, and from 0 to 99 percent by weight of at least one non-hydrophilic monomer selected from the group consisting of (meth)acrylates, maleates, (meth) acrylamides, vinyl esters, and combinations thereof, wherein said polymer has a Tg of from -40°C to +105°C, and wherein said binder comprises an aqueous emulsion residue which exhibits salt sensitive dispersibility in tap water.

New claim 17, directed more generally to nonwoven materials with a salt-sensitive binder, is also reproduced below for reference.

Claim 17. A non-woven material comprising:

- a) a web of fibers; and
- b) an emulsion binder which includes an aqueous, colloid-stabilized emulsion residue which comprises from 1 to 100 percent by weight of a hydrophilic monomer and from 0 to 99 percent by weight of at least one non-hydrophilic monomer, wherein said hydrophilic monomers and said hydrophobic monomers are selected and present in amounts such that the colloid-stabilized, aqueous emulsion residue is dispersible in water, yet non-

dispersible in aqueous solutions containing 0.5 weight percent or more of an inorganic salt.

The Examiner rejected claims 1-16 as non-enabling reasoning that the specification is not adequately enabled for producing the polymer component in the claim, having the recited properties, "because not all of the monomer combinations that fall within the scope of the claims necessarily result in a polymer having the claimed properties." The Examiner further states that the compositional range is so broad that it does not provide sufficient guidance to those skilled in the art to make and use a polymer with the claimed properties (salt-sensitivity, glass transition temperature) without undue experimentation. The Examiner finally notes that the specification only discloses a few working compositions in the Examples. Summarizing, the Examiner appears to assert that the full breadth of claim scope is not enabled by Applicant's detailed description.

As amended, the claims are believed to be enabled to their full scope. Claims 1, 14, and 15 have been amended to recite that the hydrophilic monomers are selected from those having carboxylic acid moieties, dicarboxylic acid moieties, sulfonic acid moieties, or combinations thereof. The non-hydrophilic monomers recited in these claims have also been more particularly defined to include (meth)acrylates, maleates, (meth) acrylamides, vinyl esters, and combinations thereof. New claim 17, recites that the types and amounts of monomers are selected such that the emulsion resin exhibits salt-sensitivity. Additionally, the claims have been amended to recite that the emulsion binder is colloid-stabilized, which is also a significant feature in obtaining the desired salt-sensitivity. *See, e.g.*, application as originally filed at page 4, lines 16-17.

Relevant to the enablement rejection, we note that disclosure in pending application should be viewed with reference to United States Patent Application Serial No. 09/540,033 (now US 6,683,129 to *Eknoian*), which is incorporated by reference in the pending application. *See*, application as originally filed at p. 6. It is well settled that the enablement requirement can be satisfied with material that is incorporated by reference. *Amtel Corp. v. Information Storage Devices Inc.*, 53 USPQ2d 1225, 1230 (Fed. Cir. 1999).

The attached *Declaration* of Steven P. Pauls, Sr., clearly establishes that the claims pending in the present application are enabled to their full scope. To satisfy enablement, the specification need not describe how to make and use every possible variant of the claimed invention. *Chiron Corp. v. Genentech Inc.*, 70 USPQ2d 1321, 1325 (Fed. Cir. 2004). "As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. 112 is satisfied." MPEP § 2164.01(b).

Here, the detailed disclosure of the pending application, coupled with that in the '033 application and what is generally known in the art, provides ample information on how to make and use the webs of the invention to the full scope of the claims, without undue experimentation. As stated in the attached *Declaration* at paragraph 6, the pending application provides working examples, numerous monomers that may be suitably used in the salt-sensitive polymer, as well as other ingredients. Furthermore, the '033 application which was incorporated into the pending application by reference, provides extensive information useful to the production of salt-sensitive emulsion polymers. The '033 application describes 23 working examples which include hydrophilic monomers and comonomers present in varying amounts. Significantly, the examples in the '033 application employ many of the hydrophilic and hydrophobic monomers which were introduced into claims 1, 14, and 15 by the above amendments, and added in new claims 18-21. For the hydrophilic monomers, resins are exemplified which include both carboxylic acid and sulfonic acid monomers. Additionally, various non-hydrophilic monomers are employed including alkyl acrylates, methacrylates, maleates, and vinyl esters. *Declaration* at paragraph 7. Accordingly, amended claims 1, 14, and 15 and new claims 18-21 are most clearly patentable from a § 112, 1st paragraph perspective.

The '033 application includes further guidance such as additional suitable monomers and monomer amounts, molecular weights, polymerization techniques, etc. *Declaration* at paragraphs 7-8. For purposes of illustrating the breadth of that disclosure, the examples described in the '033 application to *Eknoian* are outlined in the table below.

Monomer Composition	Surfac- tant	Sub- strate	Solubility	
			Tap 3% NaCl	
60 MAA/25 BA/15 2EHA	Yes	Glass, Hair, Wood	Yes	No
60 MAA/25 BA/15 2EHA	No	Glass, Hair, Wood	Yes	No
50 MAA/30 BA/20 2EHA	Yes	Glass	Yes	No
30 MAA/40 BA/30 2EHA	No	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 VA	Yes	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 VA	No	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 MOM	Yes	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 MOM	No	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 MAH	Yes	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 MAH	No	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 AMPS	Yes	Glass	Yes	No
60 MAA/25 BA/15 2EHA/5 AMPS	No	Glass	Yes	No
50 VA/50 MOM	No	Glass	No	No
40 VA/10 MOM/30 MAA	No	Glass	Yes	No
70 MAA/20 BA/10 2EHA	Yes	Glass	Yes	No
70 MAA/20 BA/10 2EHA	No	Glass	Yes	No
60 MAA/25 BA/15 MMA	Yes	Glass	Yes	No
60 MAA/25 BA/15 MMA	No	Glass	Yes	No
60 MAA/25 BA/15 MMA/5 AMPS	Yes	Glass	Yes	No
60 MAA/25 BA/15 MMA/5 AMPS	No	Glass	Yes	No
54 MAA/6 AA/25 BA/15 MMA	Yes	Glass	Yes	No
54 MAA/6 AA/25 BA/15 MMA	No	Glass	Yes	No
54 MAA/6 AA/25 BA/15 MMA/5 MOM	Yes	Glass	Yes	No
54 MAA/6 AA/25 BA/15 MMA/5 MOM	No	Glass	Yes	No

Although previous salt-sensitive compositions have been described in the art, including those produced by solution polymerization (*See, e.g.*, US Patent Nos. 5,631,317; 5,317,063; and 5,312,883), the '033 application was significant because it described how to make salt-sensitive resins as aqueous emulsions. *Declaration* at paragraph 9. Additionally, it was generally recognized that the balance of hydrophilic/hydrophobic moieties could be controlled to produce salt-sensitive polymers with different properties, for example, as described in United States Patent No. 6,423,804 to *Chang et al.* at col. 3, line 63 through col. 4, line 15. Thus, as stated in the attached *Declaration*, while the choice and amounts of monomers should be carefully selected to achieve optimal performance for a given application, the choice of monomers and their amounts would not require a great amount of experimentation to produce a salt-sensitive polymer, when armed with the information contained in the pending application, the '033

application, and what was generally known in the art at the time the application was filed. As stated in paragraph 9 of the *Declaration*:

9. As of the filing date of the pending application, salt-sensitive polymers, *per se*, were known, such as those described in the Lion Corporation patents (US Patent Nos. 5,631,317; 5,317,063; and 5,312,883). Similarly, it was generally known at the time the pending application was filed, that the hydrophilic monomer/non-hydrophilic monomer balance in these resins could be adjusted to make polymers with different salt-sensitive behavior. The '033 application was significant in the field of salt-sensitive technology because it described how to make salt-sensitive resins as emulsions. Accordingly, while the choice and amounts of monomers should be carefully selected to achieve optimal performance for a particular application, the choice and relative amounts of hydrophilic monomer and non-hydrophilic monomers to make the polymer salt-sensitive would be a matter of routine, or at least not require a great deal of trial when provided with the information contained in the pending application and '033 application. Indeed, a wide variety of monomers could be used to make salt-sensitive polymers.

Further, as stated in the *Declaration* at paragraph 10, the fabrication of a resin with the claimed glass transition temperature would have been well within the knowledge of those skilled in the art, based on T_g of the various monomer components.

Accordingly, the specification of the application and the disclosure of the '033 application, would allow a skilled artisan to make and use the inventive webs to the full extent of the claim scope without undue experimentation, including the manufacture of salt-sensitive emulsion resins with the compositions and properties recited in the pending claims for use in the nonwoven material. *Declaration* at paragraph 11. Accordingly, the § 112, first paragraph rejections should be withdrawn and the claims allowed to issue.

Furthermore, in the present case, the Examiner has not provided a reasonable explanation as to why the breadth of the claims are not adequately enabled by the disclosure. Similar circumstances were considered in *In re Bowen*, 181 USPQ 48 (C.C.P.A. 1974). In that case, an applicant's claim reciting "polymerizable materials" was rejected as non-enabling under the reasoning that the claim encompassed numerous undisclosed polymers, and therefore did not enable their use. The court reversed, stating:

Accordingly, there appears to be no basis for the non-enablement rejection on the theory that claims read on undisclosed polymers. While the claims literally comprehend numerous polymers in addition to the one specifically described in appellant's specification, nylon 66, no persuasive reason has been given by the Patent Office why the specification does not realistically enable one skilled in the art to practice the invention as broadly as it is claimed.

Id. at 51-52. So too is the case here. It is not relevant whether or not all of the possible monomer combinations that fall within the scope of the claims “necessarily result” in a polymer with the claimed salt-sensitive properties, so long as a skilled artisan is provided with sufficient guidance to make and use the invention without undue experimentation. In this regard, the attached *Declaration* is believed dispositive on the issue of enablement.

We finally note with respect to enablement, that on page 4 of the outstanding Office Action, the Examiner cited MPEP § 2163 and *Fujiwaka v. Wattanasin*, for the assertion that the specification is non-enabling because it is a “laundry list” style chemical disclosure. However, the cited case and section 2163 of the MPEP relate to the written description requirement, which is separate and distinct from the enablement requirement of § 112, and not indicative of whether the pending claims are enabled or not. *Vas-Cath, Inc. v. Mahukar*, 19 USPQ2d 1111, 1116-1117 (Fed. Cir. 1991).

Turning to the § 112, 2nd paragraph rejection, the Examiner rejected claims 1-16 as indefinite because (a) they “fail to sufficiently recite structure and/or chemistry of the polymer that produces the desired tap water dispersibility and non-dispersibility in an emulsion binder”; and (b) because the second clause of claim 1 “is not clear as to whether or not the polymer itself has salt sensitive dispersibility, or whether or not the polymer contributes to the salt sensitive dispersibility of the emulsion binder.”

The definiteness requirement of ¶ 2 requires an Applicant to claim his inventive subject matter with a reasonable degree of clarity and particularity. MPEP § 2173.02. The standard for definiteness is whether a claim reasonably apprises those ordinarily skilled in the art of its scope. *In re Warmerdam*, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). In the case of *In re Miller*, 169

USPQ 597 (C.C.P.A. 1971), a claim relating to PTFE with certain properties was rejected by the Examiner as indefinite. The court laid out the proper approach to definiteness issues by stating “[i]f those of skill in the art can tell whether any particular PTFE powder is or is not within the scope of a claim, the claim fulfills its purpose as a definition.” *Id.* at 599.

The Examiner’s first reason for rejecting the claims on definiteness grounds is untenable because whether or not ‘sufficient structure’ is recited is not relevant to considerations of definiteness, so long as the claim is clear as to its scope. As in *In re Miller*, a skilled artisan considering the pending claims would be readily apprised of the claim scope by determining whether or not a given fibrous web would meet the claim limitations, *i.e.*, by determining the composition of the binder and testing the binder for dispersibility in water and salt solution. In sum, the recitation of additional structure, as asserted by the Examiner, is not necessary to determine claim scope in this case, and the rejection should be withdrawn.

The Examiner’s second reason for rejecting the claims as indefinite has been ameliorated by the above amendments. Specifically, it is clear from the amended claims the binder composition includes a colloid-stabilized polymer which has tap-water dispersibility yet is non-dispersible in solutions having 0.5 % salt.

This response is believed timely filed. Please charge any fees for additional claims to Deposit Account No. 50-0935. If any additional extensions or fees are necessary, please consider this a *Petition* therefore and charge any fees to Deposit Account No. 50-0935.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'A. Webb', with a long horizontal flourish extending to the right.

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